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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,559	06/13/2005	Hiroshi Nishizawa	37624	5065
52054 7590 06/21/2007 PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			EXAMINER FENWICK, WARREN K	
			ART UNIT 2809	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

TH

Office Action Summary

Application No.

10/538,559

Applicant(s)

NISHIZAWA, HIROSHI

Examiner

Warren K. Fenwick

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/13/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 06/13/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the IDS is being considered by the examiner.
2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." However, since the references listed in the specification are also listed on the applicant's IDS (form USPTO 1449), those references have been considered by the examiner.

Foreign Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

4. Receipt is acknowledged of applicant's preamendment, which added additional specification support, without adding new matter.

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

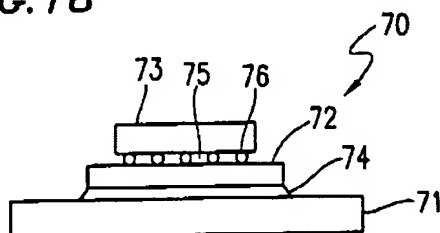
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- 1) Determining the scope and contents of the prior art.
- 2) Ascertaining the differences between the prior art and the claims at issue.
- 3) Resolving the level of ordinary skill in the pertinent art.
- 4) Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Harazono (U. S. Patent # 6,707,125 B2) above in view of Nakamura et al. (U. S. PG Pub # 2003/0155639 A1).

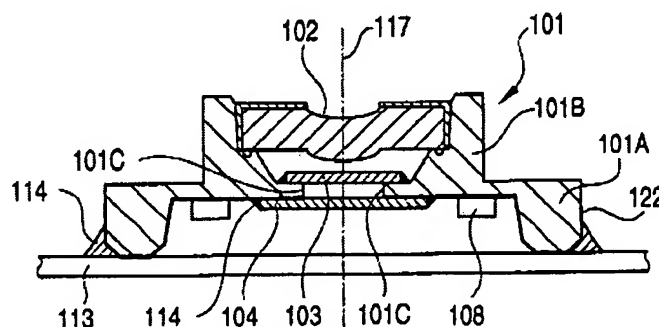
8. Regarding **claim 1**, Harazono discloses an imaging apparatus (Figure 7, element 101) comprising:



10. Nakamura et al. teach an imaging apparatus (Figure 18, element 70) having a substrate fixing said semiconductor imaging device by means of adhesion using a filler-containing adhesive (Figure 18, element 75; wherein a diameter of said filler is smaller than or equal to a pixel size of said semiconductor imaging device (paragraph 10, lines 4-7)).

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made that an imaging apparatus as disclosed by Harazono utilizes the adhesive filler that is spherical in shape and has a diameter larger than or equal to $\frac{1}{2}$ of a pixel size (of the semiconductor imaging device) as taught by Nakamura et al., which would enable the solid-state imaging device to be capable of keeping the number of steps added for mounting a peripheral integrated circuit on a solid-state imaging element to a minimum.

FIG. 6



12. Regarding **claim 2**, Harazono discloses the imaging apparatus, wherein said fixing member is a three-dimensional substrate (Figure 6, element 113).

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13. Regarding **claim 3**, Harazono discloses an imaging apparatus comprising a semiconductor imaging device (Figure 6, element 104), which converts incident light to an electrical signal (column 1, lines 12-16). However, Harazono does not disclose a substrate fixing said semiconductor imaging device by means of adhesion using a filler-containing adhesive.

14. Nakamura et al. teach an imaging apparatus (Figure 18, element 70) having a substrate fixing said semiconductor imaging device by means of adhesion using a filler-containing adhesive; wherein a diameter of said filler is smaller than or equal to a pixel size of said semiconductor imaging device (paragraph 10, lines 4-7).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made that an imaging apparatus as disclosed by Harazono utilizes the adhesive filler that is spherical in shape and has a diameter smaller than or equal to the pixel size (of the imaging apparatus) as taught by Nakamura et al., which would enable the solid-state imaging device to be capable of keeping the number of steps added for mounting a peripheral integrated circuit on a solid-state imaging element to a minimum.

16. The cited primary reference Harazono teach discloses a semiconductor imaging device having the claim limitations cited in claims 1 and 3, above. However, Harazono does not disclose

- Regarding **claim 4**, the imaging apparatus, wherein said diameter of said filler is larger than or equal to 1/2 of a pixel size of said semiconductor imaging device.

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- Regarding **claim 5**, the imaging apparatus, wherein said filler is spherical in shape.

17. Nakamura et al. teach:

- Regarding **claim 4**, the imaging apparatus, wherein said diameter of said filler is larger than or equal to 1/2 of a pixel size of said semiconductor imaging device (paragraph 10, lines 4-7).
- Regarding **claim 5**, the imaging apparatus, wherein said filler is spherical in shape (paragraph 10, lines 4-7).

18. It would have been obvious to one of ordinary skill in the art at the time the invention was made that an imaging apparatus as disclosed by Harazono utilizes the adhesive filler that is spherical in shape and has a diameter larger than or equal to 1/2 of a pixel size (of the imaging apparatus) as taught by Nakamura et al., which would enable the solid-state imaging device to be capable of keeping the number of steps added for mounting a peripheral integrated circuit on a solid-state imaging element to a minimum.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references, made of record and not relied upon, are presented in the following paragraphs.

20. Tanak et al. (U. S. PGPub # 2003/0128442 A1) disclose an "Image Pickup Device and Process for Producing the Same".

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21. Adachi et al. (U. S. PGPub # 2005/0270403 A1) disclose "Image Pickup Device, and Image Pickup Device Assembling Method".

22. Nishizawa (U. S. PGPub # 2004/0222352 A1) discloses an "Imaging Apparatus".

23. Kojima (U. S. PGPub # 2005/0001331 A1) disclose a "Module With a Built-in Semiconductor and Method for Producing the Same".

24. Harazono (U. S. PGPub # 2003/0112714 A1) discloses a "Solid-State Imaging Apparatus and Manufacturing Method Thereof".

25. Sakata et al. (U. S. Patent # 6,372,859 B1) discloses a "Thermoresistance Adhesive and Semiconductor Device Using the Same".

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warren K. Fenwick whose telephone number is 571-270-3040. The examiner can normally be reached on Mon - Fri 9A to 5:30P, Eastern Time.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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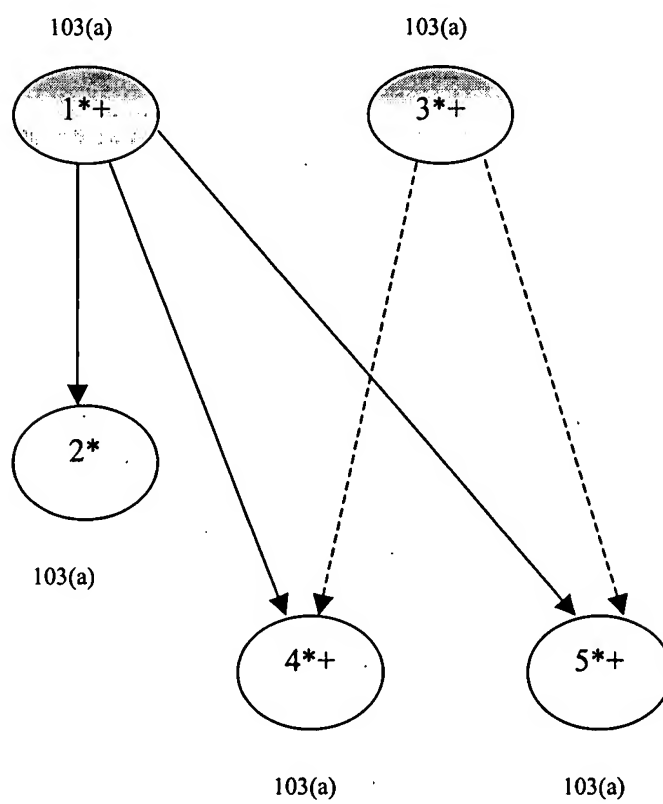
28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WKF

A handwritten signature in black ink, appearing to read 'Patrick Assouad', with a stylized flourish at the end.

PATRICK ASSOUD
SUPERVISORY PATENT EXAMINER

CLAIM TREE for 10/538,559



* Harazono
+ Nakamura et al.